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FORM 1

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LODGED AT SUB-OFFICE
3 SEP 1985
Melbourne

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

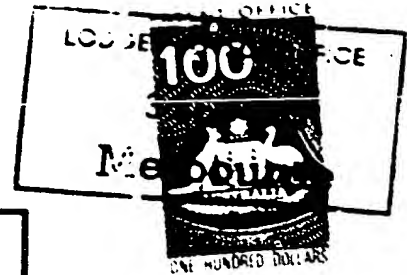
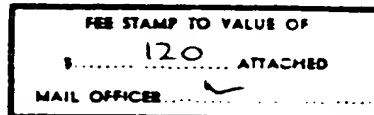
ACCEPTED AND AMENDMENTS

25-5-87

APPLICATION FOR A STANDARD PATENT

I/We,

UNILEVER PLC



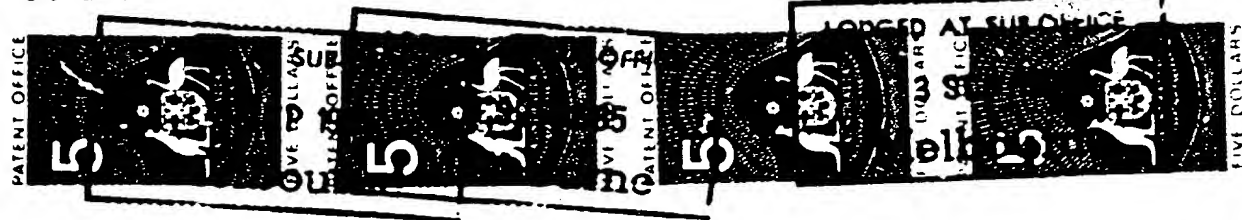
of Unilever House, Blackfriars, LONDON E.C.4., ENGLAND,

hereby apply for the grant of a standard patent for an invention
entitled :- FRAGRANT LIQUID CLEANING COMPOSITION.

which is described in the accompanying ~~provisional~~/complete
specification.

Details of basic application(s):

Number of basic application	Name of Convention country in which basic application was filed	Date of basic application
84 22372	Great Britain	5th September, 1984.



My/our address for service is care of CLEMENT HACK & CO., Patent Attorneys, 140 William Street, Melbourne, Victoria, 3000, Australia.

DATED this 2nd day of September, 1985.

UNILEVER PLC.

To: The Commissioner of Patents.

CLEMENT HACK & CO

Stephen H. Wilson

PF/App/6/84

Forms 7 and 8

AUSTRALIAPatents Act 1952DECLARATION IN SUPPORT OF A CONVENTION OR NON-CONVENTION
APPLICATION FOR A PATENT OR PATENT OF ADDITIONName(s) of
Applicant(s)In support of the application made by UNILEVER PLC

Title

for a patent for an invention entitled
FRAGRANT LIQUID CLEANING COMPOSITIONSName(s) and
address(es)
of person(s)
making
declarationI/we, DAPHNE VIOLET DUNGLEYAuthorised Signatoryof Unilever House, Blackfriars, London E.C.4, Great Britain.

do solemnly and sincerely declare as follows:-

1. I am/~~we~~ are the applicant(s) for the patent
~~am/are~~ authorised by the abovementioned applicant
to make this declaration on its behalf.

2. The basic application(s) as defined by Section 141
of the Act was/~~were~~ made in the following country
or ~~countries~~ on the following date(s) by the
following applicant(s) namely:-

Country, filing
date and name
of Applicant(s)
for the or
each basic
application

in Great Britain on 5th September 19 84
by UNILEVER PLC
in _____ on _____ 19 ____
by _____

3. The said basic application(s) was/~~were~~ the first
application(s) made in a Convention country in respect
of the invention the subject of the application.

Name(s) and
address(es)
of the or
each actual
inventor

4. The actual inventor(s) of the said invention is/are
George Kerr RENNIE, 26 Spital Road, Bebington, Wirral, Mersey-
side L63 9JF, Great Britain and
Paul David HARDMAN, 22 Withert Avenue, Bebington, Wirral, Mersey-
side L63 5NF, Great Britain.

See reverse
side of this
form for
guidance in
completing
this part

5. The facts upon which the applicant(s) is/are entitled
to make this application are as follows:-
The applicants would be entitled to have assigned to them a patent
granted to any of the actual inventors in respect to the said
invention.

DECLARED at London this 1st day of August 1985D. Dungleby

(12) AUSTRALIAN PATENT ABRIDGMENT

(19) AU

(11) AU-B-46993/85

(54) FRAGRANT LIQUID CLEANING COMPOSITION

(71) UNILEVER PLC

(21) 46993/85

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(22) 3.9.85

(24) 5.9.84

(31) 8422372

(32) 5.9.84

(33) GB

(43) 13.3.86

(44) 9.7.87

(51)⁴ C11D 3/37

(72) GEORGE KERR RENNIE AND PAUL DAVID HARDMAN

(74) HA

(56) 43006/85

C11D 3/37

27210/84

C11D 1/12

24713/84

C11D 3/60; A61K 7/06; A61K 7/42

(57) The present invention relates to fragrant liquid cleaning compositions. More particularly it relates to thickened fragrant liquid cleaning compositions with longer lasting olfactory properties.

Claims

1. A fragrant aqueous liquid cleaning composition comprising from 0.05-20% by weight of one or more surface-active detergents, from 0.1-1.5% by weight of one or more perfumes, and from 0.1-3% by weight of one or more polymers in an aqueous medium, wherein the polymer is shear thinning, having a viscosity, at 25°C in deionised water at a concentration of 3% by weight or less, of between 0.3 and 0.006 Pa.s at a shear rate of 2000 sec⁻¹, of between 0.7 and 0.03 Pa.s at a shear rate of 30 sec⁻¹, and of between 0.6 and 50 Pa.s at a shear rate of 0.5 sec⁻¹.

563433

AUSTRALIA

PATENTS ACT 1962

Form 10

COMPLETE SPECIFICATION

(ORIGINAL)

FOR OFFICE USE

Short Title:

Int. Cl:

Application Number:

Lodged:

Complete Specification—Lodged:

Accepted:

Lapsed:

Published:

Priority:

Related Art:

46993/55

TO BE COMPLETED BY APPLICANT

Name of Applicant:

UNILEVER PLC

Address of Applicant:

Unilever House,
Blackfriars,
LONDON E.C.4, ENGLAND.

Actual Inventor:

Address for Service:

CLEMENT HACK & CO.,
140 William Street,
Melbourne, Vic. 3000.
Australia.

Complete Specification for the invention entitled: FRAGRANT LIQUID CLEANING COMPOSITION.

following statement is a full description of this invention, including the best method of performing it known to me:—

2/80

FRAGRANT LIQUID CLEANING COMPOSITIONS

The present invention relates to fragrant liquid cleaning compositions. More particularly it relates to thickened fragrant liquid cleaning compositions with longer lasting olfactory properties.

5

Liquid cleaning compositions which contain a perfume are well known in the art. They are formulated and used for a variety of purposes, mainly for general purpose cleaning, such as the cleaning of hard surfaces, e.g. tiles, kitchen sinks, floors, baths, lavatories, etc. For particular purposes, such as bathrooms, lavatories, etc. often a higher level of perfume is included in such cleaning compositions in order to achieve a fragrant atmosphere in such places.

15

However, the fragrance thus provided is often only of relatively short lifetime, as the perfume evaporates into the air and is, as it were, diluted by the air. Moreover, often the cleaning composition has only a short residence time on the substrate to be cleaned, thus leaving relatively little time for the perfume to evaporate and impart a pleasant fragrance to the substrate and its surroundings. If the cleaning operation is followed by a rinsing step, whereby the cleaning composition is removed, this causes a further reduction of the residence time of the perfume present on the surface of the substrate.

20

25

30

It is an object of the present invention to increase the residence time of the fragrant cleaning composition on the surface of the substrate treated therewith and reduce drainage losses by subsequent rinsing.

35

It is another object of the present invention to reduce the level of perfume in such liquid cleaning compositions

whil maintaining or v n improving the long vity of the fragrance imparted to the substrate and its surroundings.

5 It has now been found that these and other objects of the invention can be achieved by inclusion of the perfume in a liquid cleaning composition which is shear thinning. Such shear thinning liquid cleaning compositions are obtained according to the present invention
10 by inclusion in an aqueous liquid surface-active agent-containing cleaning composition of a polymer which is shear thinning, thus causing the product containing this polymer to be sufficiently thick when draining but sufficiently thin when being dispensed from the container.
15

The polymer should have a viscosity, at 25°C in deionised water at a polymer concentration of 3% by weight or less, of between 0.3 and 0.006 Pa.S, preferably between
20 0.15 and 0.006 Pa.s and particularly preferably between 0.04 and 0.006 Pa.s, at a shear rate of 2000 sec⁻¹, and at a shear rate of 30 sec⁻¹ a viscosity of between 0.7, preferably 0.5 and particularly preferably 0.3 Pa.s and 0.03 Pa.s, and a viscosity at a shear rate
25 of 0.5 sec⁻¹ of between 0.6 Pa.s, preferably 1.1 Pa.s and particularly preferably 2.0 Pa.s and 50 Pa.s.

The polymer should furthermore be compatible with the surface-active agents present in the cleaning composition.
30 Sutable examples of polymers to be used according to the present invention are biopolymers such as the xanthan gums and derivatives thereof, such as Kelzan S, a partially ac tylated xanthan gum x Kelco Co., Sh 11-flo-XA x Shell Chemicals Ltd, Enorflo-XA x Sh 11
35 Chemicals, Rhodapol x Rhône-Poul nc, cross-link d polyacrylat s, such as Carbopol x B.P.Goodrich Co. Ltd, succinoglucan , uch as Shellflo-S x Sh 11 Chemi-

cals Ltd, acrylic copolymers such as E.P. 1996 ex
National Adhesives and Resins Ltd.

The amount of polymer used in the cleaning composition
5 generally ranges from 0.1-3.0%, usually from 0.25-1.0%,
and preferably from 0.4-0.8 by weight. The liquid
cleaning composition comprises furthermore as essential
ingredients one or more detergent active materials
which can be anionic, nonionic and zwitterionic type
10 detergent actives or mixtures thereof. Usually anionic
synthetic detergents, such as the alkylbenzene sul-
phonates, alkanesulphonates, alkylsulphates, alkyl-
thethersulphates or mixtures thereof can be used. A
typical example thereof is a mixture of sodium dodecyl
15 benzenesulphonate and a sodium salt of a sulphated
C₁₂-C₁₅ primary linear alcohol condensed with 3
moles of ethylene oxide. In general the amount of
active detergent material in the composition ranges
from 0.05-20%, usually from 0.1-15% and preferably from
20 2-10% by weight.

Another essential ingredient of the cleaning composition
is a perfume, by which is to be understood either a
single fragrant compound or a mixture of various
25 compounds. Any type of perfume may be used. The amount
of perfume in the composition may vary from 0.1-1.5%,
usually from 0.2-1.0% and preferably from 0.25-0.8%.

Furthermore, other ingredients commonly encountered in
30 such compositions may also optionally be included, such
as builders, sequestering agents, dyes, preservatives,
bleaches, bleach activators, solvents, enzymes, foam
controlling agents, hydrotropes and so on. The liquid
medium of the composition usually is an aqueous
35 medium.

The invention will further be illustrated by way of
Example.

EXAMPLE 1

The following formulations were prepared.

5	<u>% by weight</u>	
	A	B
Sodium alkylbenzenesulphonate	1.8	1.8
Sodium salt of sulphated C ₁₂ -C ₁₅		
10 linear primary alcohol condensed		
with 3 moles of ethylene oxide	1.8	1.8
Perfume	1.0	1.0
Industrial Methylated Spirit	4.0	4.0
Dye	0.007	0.007
15 Sodium hexametaphosphate	0.5	0.5
Formalin	0.5	0.5
Polymer	0.52	0.6
Water	ad 100	ad 100

20 In formulation A the polymer was Natrosol 250 HBR, a cellulose-based polymer ex Hercules, Inc. and in formulation B the polymer was Kelzan S. The latter polymer had the following viscosity (0.6% in deionised water at 25°C): 0.014 Pa.s ($\gamma = 2000 \text{ sec}^{-1}$), 0.4 Pa.s ($\gamma = 30$

25 sec^{-1}) and 8 Pa.s ($\gamma = 0.5 \text{ sec}^{-1}$).

The concentration of the polymers was chosen to match the dispensing characteristics of both formulations.

30 These formulations were compared in the following manner : On to ceramic tiles, 15 g of each product was dosed and the tiles were placed in a vertical position to allow the products to drain. After half an hour, only 6% of formulation A remained on the tile, whereas

35 43% of formulation B was still present on the tile.

In another experiment, plastic tiles were immersed in

th test products and then drained vertically for 1 hour without any further ventilation. The perfume impact was then assessed by a panel using a magnitude estimation (ME) technique. With formulation A, an ME of the perfume strength of 80 was reached, whereas with formulation B the perfume strength was assessed to have an ME of 130.

The results thereof showed that the Kelzan-containing formulation produced a significantly longer lasting perfume intensity.

EXAMPLE 2

The following formulation equally produced a longer lasting perfume intensity, and imparted a glossy appearance to the hard surfaces treated therewith:

	<u>% by weight</u>
20 Sodium alkylbenzenesulphonate	0.25
Sodium salt of sulphonated C ₁₂ -C ₁₅	
linear primary alcohol condensed with	
3 moles of ethylene oxide	0.25
Linear primary C ₉ -C ₁₁ alcohol,	
25 condensed with 5 moles of ethylene oxide	1.0
Perfume	0.7
Dye	0.01
Formalin	0.75
Polymer	1.0
30 Water	balance

The polymer was an acrylic copolymer, obtainable from National Adhesives and Resins Ltd under the name E.P. 1996. This copolymer has the following viscosities (0.9% in deionised water at 25°C):

at $\dot{\gamma} = 2000$	$s\ c^{-1}$	0.036 Pa.s
$\dot{\gamma} = 30$	sec^{-1}	0.17 Pa.s
$\dot{\gamma} = 0.5$	sec^{-1}	1 Pa.s

- 5 In the above examples, the viscosities were measured with a Haake RV 2 rheoviscometer.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A fragrant aqueous liquid cleaning composition comprising from 0.05-20% by weight of one or more surface-active detergents, from 0.1-1.5% by weight of one or more perfumes, and from 0.1-3% by weight of one or more polymers in an aqueous medium, wherein the polymer is shear thinning, having a viscosity, at 25°C in deionised water at a concentration of 3% by weight or less, of between 0.3 and 0.006 Pa.s at a shear rate of 2000 sec^{-1} , of between 0.7 and 0.03 Pa.s at a shear rate of 30 sec^{-1} , and of between 0.6 and 50 Pa.s at a shear rate of 0.5 sec^{-1} .
2. A composition according to claim 1, wherein the polymer has the following viscosities:
 - between 0.15 and 0.006 Pa.s at 2000 sec^{-1} ,
 - between 0.5 and 0.03 Pa.s at 30 sec^{-1}
 - and between 1.1 and 50 Pa.s at 0.5 sec^{-1} .
3. A composition according to claim 1, wherein the polymer has the following viscosities:
 - between 0.04 and 0.006 Pa.s at 2000 sec^{-1} ,
 - between 0.3 and 0.03 Pa.s at 30 sec^{-1}
 - and between 2.0 and 50 Pa.s at 0.5 sec^{-1} .
4. A composition according to claim 1, wherein it contains 0.25-1% by weight of the polymer and 0.25-0.8% of the perfume.
5. A composition according to claim 1, wherein the polymer is a xanthan gum or a derivative thereof, or a succinoglucan, or a cross-linked polyacrylate, or an acrylic copolymer.

DATED THIS 2ND DAY OF SEPTEMBER, 1985.

UNILEVER PLC

By Its Patent Attorneys:

CLEMENT HACK & CO.

Fllores Institute of Patent Attorneys of Australia.